

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

1-289202
6 PD

In re Application of:

Yoram UZIEL et al.

Serial No.: 09/721,167

Filed: November 22, 2000

For: AN IN-SITU MODULE FOR PARTICLE
REMOVAL FROM SOLID-STATE
SURFACES

) Art Unit: N/A

) Examiner: N/A

) Washington, D.C.

) February 25, 2001

) Docket No.: STC-38090

INFORMATION DISCLOSURE STATEMENT [IDS]

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

RECEIVED
APR 17 2001
TC 2800 MAIL ROOM

This Information Disclosure Statement is submitted in accordance with 37 C.F.R. 1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

[X] 1. This IDS should be considered, in accordance with 37 C.F.R. 1.97, as it is filed:

(Check one of the boxes A-D)

☐ A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application.

[X] B. before the mailing date of a first office action on the merits.

☐ C. after (A) and (B) above, but before final rejection or allowance, and Applicants have made the necessary certification (box "i" below) or paid the necessary fee (box "ii" below).

(check one of the boxes "i" and "ii" below:)

☐ i. Counsel certifies that, upon information and belief, each item of information listed herein was either (a) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or (b) was not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of undersigned after making reasonable inquiry, was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

☐ ii. A check for the fee set forth in 1.17(p), presently believed to be \$230, is enclosed (check no. _____).

☐ D. after (A), (B) and (C) above but before payment of the issue fee: Applicant petitions under 37 C.F.R. 1.97(d) for the consideration of this IDS. A check for the fee set forth in §1.17(i), presently believed to be \$130 is enclosed (check no. _____). Counsel certifies that, upon information and belief, each item of information listed herein was either (i) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the IDS; or (ii) was not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

☐ 2. In accordance with 37 C.F.R. 1.98, this IDS includes a list (e.g., form PTO-1449) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document listed is attached, except as explained below.

(check boxes A and/or B and fill in blanks, if appropriate.)

☐ A. Document(s) _____ is (are) deemed substantially cumulative to document(s) _____, and, in accordance with 1.98(c), only a copy of each of the latter documents is enclosed.

☐ B. Certain documents were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

[insert serial numbers and filing dates of prior applications]

Applicant identifies these documents by attaching hereto copies of the forms PTO-892 and PTO-1449 from the files of the prior application(s) or a fresh PTO-1449 listing these documents, and request that they be considered and made of record in accordance with 1.98(d). Per 37 CFR 1.98(d), copies of these documents need not be filed in this application.

☐ 3. Document(s) _____ is (are) not in the English language. In accordance with 1.98(c), Applicant states:

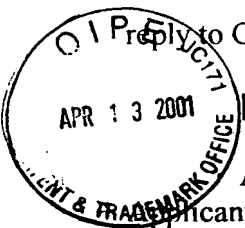
☐ An English translation of each document _____ (or of the pertinent portions thereof), or a copy of each corresponding English-language patent or application, or English-language abstract (or claim) is enclosed.

☐ A concise explanation of the relevance of document(s) _____ is found in the attached search report (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

☐ A concise explanation of the relevance of document(s) _____ is set forth as follows:
[Insert concise explanation of relevance]

☐ A concise explanation of the relevance of document(s) _____ can be found on page(s) _____ of the specification.

☐ A concise explanation of document(s) _____ can be found on the attached sheet.



4. No explanation of relevance is necessary for documents in the English language (see Reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

[X] 5. Other information being provided for the examiner's consideration follows:

An International Search Report dated May 9, 2000, which issued during the prosecution of Applicant's PCT Patent Application No. PCT/IL99/00701, which corresponds to the present application.

6. In accordance with 37 C.F.R. 1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

CROSS REFERENCE UNDER 37 C.F.R. §1.78 TO RELATED APPLICATIONS

Pursuant to 37 C.F.R. § 1.78, Applicant notes that the above-identified patent application may be related to the following U.S. Patent Applications:

(1) U.S. Provisional Patent Application Serial no. 60/172,299, entitled LASER CHEMICAL PROCESS FOR CLEAN APPLICATIONS, filed December 16, 1999;

(2) U.S. Patent Application Serial no. 60/195,867, entitled IN-SITU CONTAMINANT REMOVAL MODULE, filed April 7, 2000;

(3) PCT Patent Application No. PCT/IL99/00701, entitled LOCAL VECTORIAL PARTICLE CLEANING, filed December 23, 1999.

Respectfully submitted,

By: Talivaldis Cepuritis
Talivaldis Cepuritis (Reg. No. 20,818)

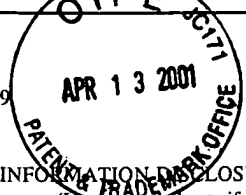
OLSON & HIERL, LTD.
20 North Wacker Drive
36th Floor
Chicago, Illinois 60606
(312) 580-1180

RECEIVED
APR 17 2001
2800 MAIL ROOM

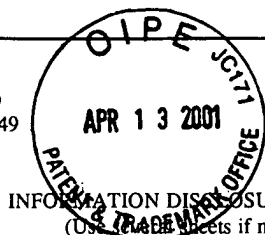
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on April 10, 2001.

Talivaldis Cepuritis
Talivaldis Cepuritis (Reg. No. 20,818)

(Rev. 5/92) Comparable to Form PTO-1449		 U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No.: STC-38090		Serial No.: 09/721,167	
				Applicant: Yoram Uziel et al.			
				Filing Date: November 22, 2000		Group: N/A	
U.S. PATENT DOCUMENTS							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation
							Yes No
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
		Tam, A.C. et al., "Laser-Cleaning Techniques for Removal of Surface Particulates", <i>J. App. Phys.</i> , 71(7), pp. 3515-3523, 1992.					
		Zapka, W. et al., "Liquid Film Enhanced Laser Cleaning", <i>Microelectronic Engineering</i> 17, pp. 473-478, 1992.					
		Tam, A.C. et al., "Laser Cleaning Techniques for the Removal of Small Surface Particulates", <i>Particles on Surfaces</i> , pp. 405-418, Marcel Dekker, Inc., 1995.					
		Vereecke, G. et al., "Evaluation of a Dry Laser Cleaning Process", <i>44th Annual Technical Meeting Inst. Env. Sci. Technol.</i> , Phoenix, 1998, pp. 1-8.					
		Lu, Y.F. et al., "Laser Cleaning of Silicon Surface with Deposition of Different Liquid Films", <i>Applied Surface Science</i> , vol. 138-139, pp. 140-144, 1999.					
		Lu, Y.F. et al., "Wavelength Effects in the Laser Cleaning Process", <i>Jpn. J. Appl. Phys.</i> vol. 37, pp. 840-844, 1998.					
		Lee, S.J., et al., "CO ₂ Laser Assisted Particle Removal Threshold Measurements", <i>Appl. Phys. Lett.</i> , 61(19), pp. 2314-2316, 1992.					
		Lee, S.J. et al., "Shock Wave Analysis of Laser Assisted Particle Removal", <i>J. Appl. Phys.</i> , 74(12), pp. 7044-7047, Dec. 15, 1993.					
		Livshits, B. et al., "Laser, Dry and Plasmaless, Photoresist Removal", <i>SolidState Technology</i> , July 1997, pp. 1-4.					
		"The Radiance Process", http://www.radianceprocess.com/rad.html , pp. 1-2, June 2000.					
		Silicon Strategies, "Applied Jumps Into Cleaning Systems for CMP Tools", http://www.siliconstrategies.com/archive , pp. 1-3, 2000.					
		DeJule, R., "Trends in Wafer Cleaning", <i>Semiconductor International</i> , August 1998, pp. 1-7, 2000.					
		Lester, M., "Researchers Develop Non-Contact Technique for Cleaning Wafers", <i>Semiconductor International</i> , Sept. 1999, pp. 1-2.					
		Baliga, J., "Defect Detection on Patterned Wafers", <i>Semiconductor International</i> , May 1997, pp. 64-70.					
		Yavas, O. et al., "Study of Nucleation Processes During Laser Cleaning of Surfaces", <i>Laser Physics</i> , 7(2), pp. 343-348, 1997.					
		Lester, M., "Laser Post-CMP Cleans", <i>Semiconductor International</i> , Oct. 1998, pp. 1-2.					
		Butterbaugh, J., "Surface Contamination Control Using Integrated Cleaning", <i>Semiconductor International</i> , June 1998, pp. 1-5.					
		U.S. Provisional Patent Application No. 60/172,299, filed December 16, 1999.					
		U.S. Provisional Patent Application No. 60/195,867, filed April 7, 2000.					
		PCT Patent Application PCT/IL99/00701.					
Examiner				Date Considered			
*Examiner:				Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

(Rev. 5/92)
Comparable to
Form PTO-1449



U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.: STC-38090

Serial No.: 09/721,167

Applicant: Yoram Uziel et al.

Filing Date: November 22, 2000

Group: N/A

U.S. PATENT DOCUMENTS

*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	4,980,536	12/25/90	Asch et al.	219	121.68	
	5,099,557	03/31/92	Engelsberg	29	25.01	
	5,024,968	06/18/91	Engelsberg	437	173	
	4,987,286	01/22/91	Allen	219	121.68	
	5,114,834	05/19/92	Nachshon	430	329	
	5,264,912	11/23/93	Vaught et al.	356	237	
	4,628,531	12/09/86	Okamoto et al.	382	8	
	5,023,424	06/11/91	Vaught	219	121.6	
	5,643,472	07/01/97	Engelsberg et al.	216	65	
	5,950,071	09/07/99	Hammond et al.	438	115	
	5,634,230	06/03/97	Maurer	15	1.51	

FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation	
					Yes	No
WO 98/10886	03/19/98	PCT				
WO 97/17167	05/15/97	PCT				
WO 97/17166	05/15/97	PCT				
WO 97/17164	05/15/97	PCT				
WO 97/17163	05/15/97	PCT				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

Examiner

Date Considered

*Examiner:

Initial if citation considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

RECEIVED
APR 17 2001
PTC 2800 MAIL ROOM